

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

KAIFI LLC,

Plaintiff,

v.

T-MOBILE US, INC. and
T-MOBILE USA, INC.,

Defendants.

Case No. 2:20-CV-281-JRG

JURY TRIAL DEMANDED

Honorable Rodney Gilstrap

**DECLARATION OF THOMAS L. BLACKBURN IN SUPPORT OF
OPENING CLAIM CONSTRUCTION BRIEF BY KAIFI LLC**

I, Thomas L. Blackburn, declare as follows:

I. INTRODUCTION

1. I am an independent consultant. I am over eighteen years of age and I would be competent to testify as to the matters set forth herein if I am called upon to do so.

2. I have been engaged by plaintiff KAIFI LLC (“KAIFI”) as an expert in this case regarding U.S. Patent No. 6,922,728 (the “’728 Patent”).

3. This disclosure is based on the information currently available to me. To the extent that additional information becomes available, I reserve the right to continue my investigation and study, which may include a review of documents and information that may be produced, as well as testimony from depositions that have not yet been taken.

4. I reserve the right to supplement this disclosure in the event that Defendants in this case clarify their claim construction positions, or provide supplemental evidence, including expert testimony, in support of their proposed claim constructions.

5. I am being compensated for my time in the amount of \$525 per hour. I have no financial interest in KAIFI or the ’728 Patent, and my compensation is not contingent upon the substance of my disclosure, any statements or opinions made, or the outcome of this matter.

II. BACKGROUND AND EXPERIENCE

6. I have studied and practiced in the field of telecommunications, including, in particular, mobile, cellular, wireless technologies, Global Positioning System (“GPS”) technologies, wired technologies, networks, phones, standards, services, and systems for over thirty years.

7. I received my Bachelor of Science from San Jose State University in electrical engineering. I have also taken numerous graduate classes in engineering and business.

8. After earning my engineering degree, I joined GTE Lenkurt, Inc. which was the equivalent to Bell Laboratories. I began working at GTE Lenkurt, Inc. as an Engineering Staff member in the Telephony R&D Group. I designed system line-cards, location register cards and high-grade voice communications coders (vocoders) for use in the PSTN network. I was invited to join GTE's Wire/Wireless Advanced Technology Group and joined a specialized group of GTE engineers, a group with noteworthy achievements – those who file significant numbers of patents and develop future corporate technologies. As a distinguished member of this group, I was promoted to Chief Technical Engineer. This group developed one of the first digital multiplexing systems for use in the PSTN network and several multi-channel voice/data customer subscriber units that were installed in the field.

9. Upon leaving GTE Lenkurt, Inc., I worked as a consultant for Evotech Microengineering from 1985-1995 and Echelon Inc. from 2005-2009 where I provided consulting services including cell phone designs for GSM, WLAN networks, navigation device designs, antenna design/testing and power supply designs.

10. During the period of 1996-2005, I was a founder of GoDigital Telecommunications where I was the Director of Engineering. I was responsible for the development and design for state-of-the-art DSL and ADSL equipment.

11. Since 2005, I have worked as a design consultant and testifying expert in the field of cellular communications, including 2G, 3G and 4G networks.

12. I also provide consulting for various clients related to mobile, cellular, wireless technologies and GPS services.

13. I have been awarded 37 U.S. and Foreign Patents, several related to cellular technologies, including modulation techniques and channel allocations. For example, U.S. Patent

No. 6,556,638 describes a method for increasing the data speed in a network (cellular network).

14. I am considered an expert in the area of cellular communications technology, particularly with respect to mobile technology, cellular networks, system roaming and handover.

15. A copy of my latest CV is attached to this declaration as Exhibit A.

III. MATERIALS CONSIDERED

16. In forming my opinions expressed herein, I considered the following items, in addition to my own personal knowledge and experience:

- The '728 Patent and its prosecution history;
- The invalidity contentions served by T-Mobile in this litigation;
- The claim construction briefing and associated materials from the litigation encaptioned *KAIFI, LLC v. AT&T, Inc., et al.*; Case No. 2:19-cv-00138-JRG (Eastern District of Texas)(the "AT&T Case"), including in particular the Declaration of Brian Kelley (Declaration of Brian T. Kelley, Ph.D.; AT&T Case, Dkt. No. 62-10) and the Court's Claim Construction Order in that matter (AT&T Case, Dkt. No. 104);
- The parties' PR 4-1, PR 4-2, and PR 4-3 disclosures, in particular the Declaration of Peter Rysavy dated March 15, 2021;
- 3GPP Technical Standards published prior to December 18, 2001;
- ANSI/IEEE Standard 802.11 (IEEE);
- ANSI/IEEE Standard 802.11a (IEEE);
- ANSI/IEEE Standard 802.11b (IEEE).

IV. LEGAL STANDARDS APPLIED IN MY DISCLOSURE

17. I have been asked to give expert opinions and technical advice on the meaning of

certain terms found in the claims of the '728 Patent.

18. I am not a patent attorney. For the purposes of this disclosure, I have been informed about certain aspects of patent law that are relevant to my analysis and opinions, as set forth in this section of my disclosure n.

19. I am informed and understand that claim construction is a matter of law, and will therefore be decided by the Court.

20. I am informed and understand that the specification, which includes the claims, is the single best guide as to the meaning of claim terms.

21. I am informed and understand that the relevant inquiry in claim construction is the question of how a hypothetical person of ordinary skill in the relevant field (sometimes by lawyers referred to as “the relevant art”) at the relevant timeframe (a “POSITA”) would have understood the claim terms at the time of the invention, in light of the patent specification and prosecution history. I further understand that a POSITA is deemed to have read the claim terms in the context of the entire patent and its prosecution history.

22. I understand that a POSITA is presumed to be a person with at least a particular level of skill and knowledge in a certain field or industry, who is capable of understanding and practicing the technology described in the patent at issue. This person is assumed to have ordinary, not extraordinary, skill.

23. I understand that the hypothetical POSITA is considered to have the normal skills and knowledge of a person in a certain technical field. I understand that factors that may be considered in determining the level of ordinary skill in the art include: (1) the education level of the inventor; (2) the types of problems encountered in the art; (3) the prior art solutions to those problems; (4) rapidity with which innovations are made; (5) the sophistication of the technology;

and (6) the education level of active workers in the field.

24. I also understand that a POSITA is presumed to be aware of the universe of available prior art. I also understand the level of ordinary skill in the art can be evidenced by the prior art. Accordingly, I have also considered the prior art discussed herein in determining the level of ordinary skill in the art.

25. In determining whom a POSITA would be, I considered the '728 Patent, the types of problems encountered in the field of roaming between different networks on mobile terminals, the known prior art solutions to those problems, and the educational level of workers active in the field. Based on these factors, I have concluded that a POSITA during the relevant timeframe would have had a bachelor's degree in computer engineering, electrical engineering or a related field, and at least 2-3 years of industry experience related to the design, analysis, and/or development of computer inter-networking systems and heterogeneous network (wire and wireless) inter-communications services, systems, and/or devices. Related postgraduate education or academic experience may suffice in lieu of related industry experience.

26. Based on my experience, I have an understanding of the capabilities of a POSITA in the relevant field. Further, I myself, had those capabilities at the time the '728 patent was effectively filed. Indeed, given my education and extensive industry experience, I exceed the education and work experience levels of a POSITA, but I nonetheless provide my opinions herein from the viewpoint of a POSITA unless I state otherwise.

V. THE '728 PATENT

27. The '728 Patent and more particularly the invention, relates to a wireless mobile communication system that can be summarized as a network connecting and roaming system. This wireless mobile communication system provides an internet connection switching system

and method which allows a user to wirelessly connect with the internet through an indoor wired LAN when a mobile data communications terminal is located indoors and allows the user to connect with the internet through a wireless LAN network or an outdoor wireless internet network of a wireless packet network when it is located outdoors.

28. Mobile device users require always on connection services which allows a device to move seamlessly between networks by re-assigning primary network connectivity of the mobile device to an AP (access point). The '728 Patent discloses a novel method or algorithm to achieve this seamless switching between dissimilar networks.

29. This technique provides the mobile device with the capability to operate in a wider coverage area as well as to de-load the primary network and reduce congestion.

VI. CLAIM CONSTRUCTION

30. I am informed and understand that claims 1-7, 9-15, and 17-20 of the '728 Patent are in dispute.

31. I am informed and understand that the following claim terms of the '728 Patent are in dispute:

No.	Claim Term	Appears In
1	"indoor network"	All asserted claims
2	"location register that stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network"	Claim 1
3	"registered indoor system ID information"	Claims 1-3, 5-7, 9-11
4	"location information of the data communication terminal received through the indoor network"	Claim 1
5	"location information of the data communication terminal received through . . . the outdoor wireless internet network"	Claim 1

32. In my opinion, a POSITA would understand these terms to have the meanings as described below.

A. “indoor network”

33. I understand KAIFI contends that this term means “a network that broadcasts system ID information able to be received within an interior of a structure.”

34. I understand that the Court previously construed this term to mean “a network that broadcasts system ID information able to be received within an interior of a structure.” *See* AT&T Case Dkt. No. 104 at p. 18.

35. I understand that Defendants contend that this term should be given its plain and ordinary meaning.

36. In my opinion, consistent with the assessment of the Court in the AT&T Case, a POSITA would have understood this term as used in the ’728 Patent to mean “a network that broadcasts system ID information able to be received within an interior of a structure.”

37. As noted in the Court’s prior claim construction analysis, the asserted claims include reference to two different networks, an “indoor network” and an “outdoor wireless internet network.” *See, e.g.,* ’728 Patent at Claim 1:

a data communication terminal that includes an indoor wireless connection module and stores registered indoor system ID information, so that the data communication terminal may be connected with the indoor network if the registered indoor system ID information is received and by connecting with the outdoor wireless internet network if the registered indoor system ID information is not received.

See also AT&T Case Dkt. No. 104 at p. 13.

38. I understand that the parties agree on the construction of “outdoor wireless internet network,” but disagree regarding the construction of “indoor network.”

39. The “indoor network” is identified by or corresponds to the indoor system ID information broadcast by the indoor gateway. The following portions of the specification are

illustrative:

- “[T]he data communication terminal includes an indoor wireless connection module and stores registered indoor system ID information, so that the data communication terminal may be connected with the indoor network if the registered indoor system ID information is received and may be connected with the outdoor wireless internet network if the registered indoor system ID information is not received; the indoor gateway includes an indoor wireless connection module therein, broadcasts the indoor system ID information, makes wireless communications with the data communication terminal through the indoor wireless connection module, and is connected with the internet network via a wire[.]” ’728 Patent at 3:27-39.
- “The indoor gateway 100 is connected with the data communication terminal 10 through the indoor wireless connection modules C and A so that the user can be connected with a home network, a SOHO network, the internet or a PSTN. In addition, the wireless internet terminal 10 located indoors can receive the indoor system ID information by allowing the indoor gateway 100 to broadcast the indoor system ID information through the indoor wireless connection module at a predetermined time interval.” ’728 Patent at 9:7-12.
- “[T]he term ‘indoors’ can mean the interior of all kinds of constructions such as buildings or houses. In particular, the term ‘indoors’ can mean any regions within a range capable of receiving the system ID information of the indoor network identical to that registered into the data communication terminal.” ’728 Patent at 14:39-43.
- “Then, if the user moves outdoors, the PDA 10 cannot receive the indoor system ID information broadcasted from the indoor gateway 100 (step 538).” ’728 Patent at 13:41-43.

40. Accordingly, the equipment or infrastructure components for the indoor network (e.g., the indoor gateway) may be deployed exterior to a building, but provide network coverage to users inside the building. An “indoor network” need not be based or restricted to the physical footprint of a home or building. *See* ’728 Patent at 4:64-5:8. As explained by the Court:

The Court’s construction does not limit the placement of the indoor gateway. Instead, it only requires that the indoor network broadcasts system ID information able to be received within an interior of a structure. In other words, the scope of the claims allow for equipment located exterior to a structure so long as the broadcast system ID information is able to be received within an interior of a structure.

AT&T Case Dkt. No. 104 at p. 17.

41. Indeed, as recognized by the Court in the AT&T Case, “[t]he specification discloses that one advantage of the disclosed system is that ‘the user can safely make a call by automatically providing the roaming service for changing a communication path from the indoor network to the outdoor wireless internet network.’” *See* AT&T Case Dkt. No. 104 at p. 13, citing the ’728 Patent at 14:62–65. The specification is clear that the “indoor network” is a network that broadcasts system ID information able to be received within an interior of a structure. *Id.* A POSITA would understand that the “indoor network” is the network that broadcasts system ID information able to be received within an interior of a structure. *See, e.g.,* ’728 Patent at 13:41–43 (“Then, if the user moves outdoors, the PDA 10 cannot receive the indoor system ID information broadcasted from the indoor gateway 100 (step 538).”).

42. As an expert in the design, development and use of wireless indoor networks, my industry and personal use of such networks showed me that at the time of this invention, wireless indoor networks and the coverage area or area where a mobile device could receive the system ID information extended beyond the boundaries of a home or other structure. In the design of such networks, these “home wireless networks” were set up with a power level such that the reception of the system ID information by the mobile device extended some distance beyond the boundaries of a home or other structure.

43. Mr. Rysavy opines that the “indoor network” should be “understood according to its plain and ordinary meaning.” Rysavy Decl. at ¶ 51. Mr. Rysavy further states that KAIFI’s proposed construction is “overinclusive.” *Id.* at ¶ 52. I disagree on both counts.

44. As a preliminary matter, I note that the construction of this term was disputed between the parties in the AT&T Case, which suggests to me that this term requires construction. I further note that in resolving that dispute, the Court found that the correct construction of

“indoor network” is “a network that broadcasts system ID information able to be received within an interior of a structure.” *See* AT&T Case Dkt. No. 104 at p. 18.

45. I agree with Mr. Rysavy that a 2G and 3G network are not an indoor network. This is because they do not broadcast system ID information. Cellular networks are regulated networks in the United States in which bandwidth is allocated by entity. And as a result, they do not broadcast ID information as that term is used in the '728 Patent.

46. Furthermore, I see no evidence to support Mr. Rysavy's opinion that the “indoor network” must “be one with a shorter broadcasting range that is meant for indoor structures.” An example will suffice. The range of an 802.11 wireless base station connected to ADSL can be about 50-500 meters. *See, e.g.*, Exhibit B Netgear 2001 MA101 Data Sheet. This is an example of an indoor network in the '728 Patent. It is hard to describe this as a “shorter” broadcasting area.

Further, the home gateway (hereinafter, referred to as “HG”) is a core apparatus for home information technology that connects a wireless/wire access network (subscriber network) with a home (indoor) network. In other words, it is an apparatus for interconnecting indoor network equipments, such as the Bluetooth and a home PNA (Phoneline Networking Alliance) which connects two or more terminals installed indoor with the wire/wireless communication network, with a subscriber network using an ADSL, a CATV network and the like.

The home gateway provides sharing of indoor resources; various additional services such as entertainment, education, medical examination, and home shopping using a network; remote automatic control using a portable information terminal; home security function, and the like, in addition to a super-high speed internet service and a real-time multimedia service.

Therefore, the indoor connection network of the present invention allows a communication equipment of a user moving indoors to be connected with the indoor gateway through the indoor wireless connection module, and allows the indoor gateway to be responsible for connection with the internet network.

'728 Patent at 6:6-28.

47. Accordingly, it is my opinion that a POSITA would have understood “indoor

network” to mean “a network that broadcasts system ID information able to be received within an interior of a structure.”

B. “location register that stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network”

48. I understand KAIFI contends that the term “location register” should be construed as “register that records the location of the data communication terminal,” but that the remainder of this term, “...that stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network,” needs no additional construction.

49. I understand that Dr. Kelley opined that the proper construction for the term “location register” was “a register that records the location of the data communication terminal” and that he did not offer an opinion on the remainder of this term. *See* AT&T Case, Dkt. No. 62-10, Kelley Decl. at ¶¶ 183-204.

50. I understand that the Court previously construed the term “location register” to mean “register that records the location of the data communication terminal.” *See* AT&T Case Dkt. No. 104 at p. 42.

51. I understand that Defendants contend that this term should be construed as “location register external to the data communication terminal that stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network.”

52. In my opinion, consistent with the assessment of the Court in the AT&T Case, the correct understanding that a POSITA would have of this term as used in the ’728 Patent is a “register that records the location of the data communication terminal.” In particular, I disagree with Defendants’ construction to the extent that it requires the location register be external to the

data communication terminal.

53. It is my further opinion that, upon my review of the specification, the remainder of the language identified by Defendants, "...that stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network," does not need any additional construction.

54. In particular, I see no evidence suggesting that the location register is required to be located "external" to the data communication terminal. Claim 1 itself does not specify which components of the system must be housed in the same physical device, but rather leaves open the possibility that one or more subparts of the system can be implemented as separate infrastructure elements or grouped together into one or more physical units.

55. At the time of the '728 Patent, the concept of distributed storage of data, as well as the distribution of network functions, across multiple physical locations was well known. One example of this is the OSI model of communication. *See, e.g.*, Exhibit C "Towards a flexible functional split for cloud-ran networks", A. Maeder, M. Lalam, A. De Domenico, E. Pateromichelakis, D. Wubben, J. Bartelt, R. Fritzsche, and P. Rost, in 2014 European Conference on Networks and Communications (EuCNC), pp. 1–5, IEEE (2014). In OSI, the protocol layers for wireless communication may be present even if the part of the physical layer is not present. The 3GPP standards also describe the distribution of functions across various physical structures. As noted by Dr. Kelley, access point "functions can be flexibly distributed and moved to gateway servers. So, for example the gateway may process some or all layers of the OSI stack that naturally arise in the wireless data communication terminal." *See* AT&T Case, Dkt. No. 62-10, Kelley Decl. at ¶ 255; *see also, e.g.*, Exhibit D "Mobile Agent-Based Performance Management for the Virtual Home Environment," C. Bohoris, G. Pavlou, and A. Liotta, Journal

of Network and Systems Management, Vol. 11, No. 2, June 2003; Exhibit E 3GPP Technical Specification 22.121 v4.0.0, The Virtual Home Environment (Release 4), October 2000.

56. Mr. Rysavy spends much of his declaration defending the proposition that the location register must be “external” to the data communication terminal. Rysavy Decl. at ¶¶ 38-49. In particular, Mr. Rysavy focuses on only one embodiment shown in Figures 1, 2, and 3. *Id.* at ¶¶ 41-42. In my opinion, Mr. Rysavy is improperly restricting the claims of the ’728 Patent with regard to how and where the location register may be implemented.

57. As justification for his improper limitation, Mr. Rysavy states “it does not make sense that a data communication terminal receives location information about itself through the indoor network or outdoor wireless internet network, particularly because this is information the data communication terminal already has.” Rysavy Decl. at ¶ 39. Mr. Rysavy opines that the data communication terminal does not need to receive location information because it is already aware of its own location. *Id.* at ¶ 43. This is factually not correct. A mobile terminal such as those at issue in the ’728 Patent defines its location based on its interaction with other devices, like a base station or satellite. For example, a mobile phone will receive the system ID from a Wi-Fi base station which will define its location.

58. Mr. Rysavy also fails to recognize that the specification and the claims also encompass an implementation where the location register is wholly or partially present as part of the data communication terminal. As stated above, at the time of the ’728 Patent, the concept of distributed storage of network functions across multiple physical locations was well known. *See, e.g.,* Exhibit F, M. Duser, E. Kozlovski, R. I. Killey, P. Bayvel, “Distributed router architecture for packetrouted optical networks”, Proc. 14th Working Conference on ONDM 2000, February 2000, pp. 202-221. There is nothing present in either the asserted claims or the specification that

forecloses the possibility of the functions of the location register being distributed across more than one network element.

59. In places Mr. Rysavy appears to hold the mistaken opinion that, under KAIFI's construction, the data communication terminal is coextensive with the location register. For example, Mr. Rysavy states:

- "I have not identified a single suggestion in the '728 patent that a data communication terminal serves as the location register." Rysavy Decl. at ¶ 43 (emphasis added).
- "If a data communication terminal were the claimed location register (*i.e.*, if the location register were not part of a service provider's system), the system would not be able to provide the roaming service." Rysavy Decl. at ¶ 44 (emphasis added).
- "A network design in which the data communication terminal was the location register would mean the network would consist of potentially thousands of databases with location information, which would be inefficient and unworkable." Rysavy Decl. at ¶ 48 (emphasis added).

KAIFI's construction does not render the data communication terminal synonymous or coextensive with the location register. Rather, consistent with the specification, KAIFI's proposed construction recognizes that the network functionality and/or data storage associated with the location register may be located in the same physical device as data communication terminal, on a separate physical device from the data communication terminal, or distributed between memory in the same physical device as data communication terminal and other network elements. Simply put, the patent is not about the physical implementation layer.

60. For example, the specification expressly describes that the location register can be

distributed across multiple locations: “The location register 80 is the home agent HA or the foreign agent FA which operates in accordance with the mobile IP protocol and records a current location of a data communication subscriber.” ’728 Patent at 9:12-15.

61. A home agent and foreign agent are software programs. They can run on any general purpose computer. *See, e.g.*, Exhibit G, Y. Mao, B. Knutsson, H. Lu, and J. Smith. DHARMA: Distributed Home Agent for Robust Mobile Access. in Proc of the IEEE Infocom 2005 Conference, March 2005 at 1197. Mr. Rysavy references IETF RFC 2002 in his declaration. This document places no limits on where the home agent and foreign agent are located. *See, e.g.*, Rysavy Decl., Exhibit 5, IETF RFC 2002 at 10 (“Other placements of the home agent relative to the mobile node’s home location MAY also be possible using other mechanisms for intercepting datagrams destined to the mobile node’s home address. Such placements are beyond the scope of this document....Other placements of the foreign agent relative to the mobile node MAY also be possible using other mechanisms to exchange datagrams between these nodes, but such placements are beyond the scope of this document.”).

62. Moreover, at the time of the ’728 Patent and through the present, a mobile communications terminal does not simply transmit its location. It must define its location with relation to other devices, for example, a satellite, a WiFi base station, a cellular base station. *See, e.g.*, Exhibit H, Swedberg, G. “Ericsson’s Mobile Location Solution,” Ericsson Review No. 4 (1999) (discussing determination of mobile device location by triangulation with either satellites or base stations); *see also* Exhibit I, Small, J., Smailagic, A., Siewiorek, D. “Determining User Location For Context Aware Computing Through the Use of a Wireless LAN Infrastructure” Project Aura Report (2000) at <http://www.cs.cmu.edu/~aura/docdir/small00.pdf>. I am not aware of any mobile terminal that has ever been produced that can simply report on its location. The

idea that a terminal is simply going to transmit location information and have no role in storing that information has no connection to any known mobile terminal.

63. In fact, rather than not “making sense,” as Mr. Rysavy states, having a location register located internal to the data communication terminal might result in certain benefits. For example, it might allow for a faster authentication process which would provide a faster switching mechanism. For example, if a previous locational area information or indoor system ID information had been stored in a location register located internal to the data communication terminal, this might reduce the number of required actions prior to implementing a switching action.

64. Finally, I disagree with Mr. Rysavy’s opinion that a POSITA would understand that the location register is limited to a “centralized database.” Rysavy Decl. at ¶ 45. That may be one implementation, but a POSITA would understand that it is not the only way to implement a location register in general, and certainly not a limitation on the specific location register disclosed in and claimed by the ’728 Patent.

65. Accordingly, it is my opinion that a POSITA would have understood “location register” to mean a “register that records the location of the data communication terminal,” but that the remainder of this term, “...that stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network,” should be given its plain and ordinary meaning to a POSITA.

C. “registered indoor system ID information”

66. I understand KAIFI contends that the term “registered indoor system ID information” should be construed as “indoor system ID information for which the data communication terminal has been granted access.”

67. I understand that Dr. Kelley opined that the proper construction for the term

“registered indoor system ID information” was an “indoor system ID information for which the data communication terminal has been granted access.” *See* AT&T Case, Dkt. No. 62-10, Kelley Decl. at ¶¶ 122-141.

68. I understand that the Court previously construed the term “registered indoor system ID information” to mean “indoor system ID information for which the data communication terminal has been granted access” *See* AT&T Case, Dkt. No. 104 at p. 7.

69. I understand that Defendants contend that this term needs no additional construction beyond the construction of “indoor system ID information.”

70. In my opinion, consistent with the assessment of the Court in the AT&T Case, a POSITA would understand this term as used in the ’728 Patent to mean “indoor system ID information for which the data communication terminal has been granted access.”

71. The specification describes registered indoor system ID information in the following exemplary sections:

- “Accordingly, according to an aspect of the present invention for achieving the above objects, there is an optimal internet network connecting and roaming system providing internet communication service to a data communication terminal of a user moving indoors or outdoors, being characterized in that, **the data communication terminal includes an indoor wireless connection module and stores registered indoor system ID information, so that the data communication terminal may be connected with the indoor network if the registered indoor system ID information is received and may be connected with the outdoor wireless internet network if the registered indoor system ID information is not received**; the indoor gateway includes an indoor wireless connection module therein, broadcasts the indoor system ID information, makes wireless communications with the data communication terminal through the indoor wireless connection module, and is connected with the internet network via a wire; the location register stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network; and the router determines the location of the data communication terminal stored in the location register and provides roaming of voice/data signals transferred to the user by selecting one of the indoor and the outdoor networks in accordance with the determined location of the data communication terminal.” ’728 Patent at 3:23-47 (emphasis added).

- “When the user turns on the PDA 10 outdoors, the PDA 10 is initialized and is supplied with electric power (step S10). Then, the PDA 10 confirms as to whether the indoor system ID information is received. **If it is determined that the registered system ID information of the indoor network is not received, the PDA 10 is set in an outdoor communication mode.** Thus, the user can communicate with a remote recipient through the outdoor wireless LAN network, the internet, the VoIP gateway 60, and the PSTN 70. That is, if the PDA 10 cannot receive the registered system ID information of the indoor network, the PDA 10 registers the location thereof into the location register 80 based on the mobile IP message through the path constructed by the antenna 32, the access point 22, and the routers 41, 42, 40 after going through authentication by the location register 80.” ’728 Patent at 9:38-53 (emphasis added); *see also* ’728 Patent, at Abstract, 1:1-67, 2:18-26, 2:41-51, 3:5-4:24, 4:64-5:12, 5:66-6:15, 6:29-8:26, 8:46-12:45, 12:46-13:15, 13:41-14:48, 14:56-67, Figures, Claims.
- “The present invention includes a location register for storing location information transmitted from the wireless internet terminal in order to confirm as to whether the user of the wireless internet terminal is located indoors or outdoors. The present invention can switch network paths to provide the roaming service in accordance with the location information stored in the location register.” ’728 Patent at 3:9-16.
- “The location register 80 **confirms from the registration data that the location of the user has changed from the outdoors to the indoors.**” ’728 Patent at 11:48-51 (emphasis added).
- “If the PDA 10 has gone through the authentication of location registration, the PDA 10 switches its own mode from the outdoor data communication mode to the Bluetooth mode (step S24). [¶] Then, the PDA 10 is connected with the indoor network in accordance with the indoor system ID information and makes wireless communications with the indoor gateway 100 through the Bluetooth modules A, C (step S25).” ’728 Patent at 11:51-55.

72. As seen above, in one example shown in the specification, it is the registration data that allows the location register to determine a change in the user’s location. As Dr. Kelley explains: “If the indoor system ID information has been ‘registered,’ that indoor system ID information can be used to allow the data communication terminal to connect with the indoor network that is uniquely identif[ed] by that indoor system ID information. In other words, the specification provides that by using ‘registered’ or ‘registration’ information, the data communication terminal can be permitted to access to a particular network.” *See* AT&T Case,

Dkt. No. 62-10, Kelley Decl. at ¶ 127. The construction advanced by KAIFI makes clear that “registration data” means data reflecting the fact that the data communication terminal has been granted access to the indoor network.

73. Mr. Rysavy does not offer an opinion that KAIFI’s proposed construction of “registered indoor system ID information” is technically incorrect based on his review of the intrinsic evidence. Rather, Mr. Rysavy’s opinion is that providing a construction for this term, which includes the word “registered,” would be confusing to the jury. Rysavy Decl. at ¶ 55. Mr. Rysavy opines that because “registered” is a word that is readily understood by a jury, a construction of this term is unnecessary. *Id.* at ¶¶ 57-58.

74. I disagree. The fact that a word like “registered” might be a word that the jury has an understanding of based on everyday usage does not mean that a construction of the term in the context of the ’728 Patent is not needed. On the contrary, although the average person may be familiar with registering to vote or registering for classes, unless they are qualified as a POSITA, they are likely to be unfamiliar with the specific process of registering system ID information in the context of roaming between heterogeneous wireless networks. I am not an attorney, nor have I been retained to opine on the capabilities of the potential jury in this case. However, the fact that the parties in the AT&T Case were in agreement that this term needed construction suggests to me a concern that a jury may need additional clarification on this term. In my opinion, including the language “for which the data communication terminal has been granted access” in the construction for this term accurately reflects the understanding of a POSITA and clearly states what it means for the indoor system ID information to be registered in the context of the ’728 Patent.

75. The specification describes “registered indoor system ID information:”

Accordingly, according to an aspect of the present invention for achieving the above objects, there is an optimal internet network connecting and roaming system providing internet communication service to a data communication terminal of a user moving indoors or outdoors, being characterized in that, **the data communication terminal includes an indoor wireless connection module and stores registered indoor system ID information, so that the data communication terminal may be connected with the indoor network if the registered indoor system ID information is received and may be connected with the outdoor wireless internet network if the registered indoor system ID information is not received;** the indoor gateway includes an indoor wireless connection module therein, broadcasts the indoor system ID information, makes wireless communications with the data communication terminal through the indoor wireless connection module, and is connected with the internet network via a wire; the location register stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network; and the router determines the location of the data communication terminal stored in the location register and provides roaming of voice/data signals transferred to the user by selecting one of the indoor and the outdoor networks in 14 accordance with the determined location of the data communication terminal.

'728 Patent at 3:23-47 (emphasis added).

76. As seen above, in one example shown in the specification, it is the registration data that allows the location register to determine a change in the user's location. As Dr. Kelley explains: "[i]f the indoor system ID information has been 'registered,' that indoor system ID information can be used to allow the data communication terminal to connect with the indoor network that is uniquely identif[ed] by that indoor system ID information. In other words, the specification provides that by using 'registered' or 'registration' information, the data 15 communication terminal can be permitted to access to a particular network." *See, e.g., AT&T Case, Dkt. No. 62-10, Kelley Decl. at ¶ 127.* The construction advanced by KAIFI makes clear that "registration data" means data reflecting the fact that the data communication terminal has been granted access to the indoor network.

77. Accordingly, it is my opinion that a POSITA would have understood "registered indoor system ID information" to mean "indoor system ID information for which the data communication terminal has been granted access."

D. “location information of the data communication terminal received through the indoor network” / “location information of the data communication terminal received through . . . the outdoor wireless internet network”

78. I understand KAIFI contends that the term “location information” should be construed as “information on a locational area or indoor system ID information or both,” but that the remainder of these terms, “...of the data communication terminal received through the indoor network” and “...of the data communication terminal received through . . . the outdoor wireless internet network,” should be given their plain and ordinary meaning to a POSITA.

79. I understand that Dr. Kelley opined that the proper construction for the term “location information” was “information on a locational area or indoor system ID information or both” and that he did not offer an opinion on the remainder of this term. *See* AT&T Case, Dkt. No. 62-10, Kelley Decl. at ¶¶ 205-228.

80. I understand that the Court previously construed the term “location information” to mean “information on a locational area or indoor system ID information or both.” *See* AT&T Case Dkt. No. 104 at p. 42.

81. I understand that Defendants contend that “location information of the data communication terminal received through the indoor network” should be be construed as “indoor system ID information.” I further understand that Defendants contend that “location information of the data communication terminal received through . . . the outdoor wireless internet network” should be be construed as “locational area.”

82. In my opinion, consistent with the assessment of the Court in the AT&T Case, the correct understanding that a POSITA would have of this term as used in the ’728 Patent is “information on a locational area or indoor system ID information or both.”

83. It is my further opinion that the remainder of the language identified by Defendants, “...of the data communication terminal received through the indoor network” and

“...of the data communication terminal received through . . . the outdoor wireless internet network” do not need construction.

84. Defendants’ proposed constructions improperly limit “location information” to “indoor system ID information” in one context and “locational area” in another. Neither limitation is warranted in light of the disclosures in the specification. Defendants proposed constructions are essentially the same as the construction proposed by the Defendants in the AT&T Case, which the Court rejected: “information on a locational area when the data communication terminal is located outdoors, and indoor system ID information when the terminal is located indoors.” *See* AT&T Case Dkt. No. 104 at p. 34.

85. Defendants’ proposed constructions are likely based on the following example provided in the specification: “The location information stored in the location register 80 is information on a locational area when the data communication terminal is located outdoors. On the other hand, when the terminal is located indoors, it is indoor system ID information.” ’728 Patent at 9:16-21. However, Defendants proposed construction is improperly limiting and excludes the embodiment in which both indoor system ID information and locational area are both stored.

86. As the specification states, “Preferably, the indoor location stored in the location register includes the indoor system ID.” ’728 Patent at 4:23-24. A POSITA would understand that this embodiment may store both the locational area and indoor system ID information. As a practical matter, this means that for any data communication terminal that is located “indoors,” the location information may include the the locational area in addition to the indoor system ID information. I agree with Dr. Kelley’s analysis on this point:

...a preferred embodiment may store both “indoor location”—that is, the “locational area” of the data communication terminal—and indoor system ID information. As a

practical matter, this means that for any data communication terminal that is located “indoors,” the location information may include the the locational area in addition to the indoor system ID information. This of course makes sense. For the connection state of an “indoor network,” the connectivity protocol relies on the indoor system ID information. However, this does not foreclose or prevent additional information on the locational area. As I have discussed previously, while the two networks are not required to be geographically mutually exclusive (they may overlap in region), that does not mean that the region covered by, for example, the indoor network, is ambiguous. In fact, the locational area of the indoor network would usually be a known quantity. Nothing in the ’728 Patent specifies that “location information” may comprise only locational area information when the terminal is outdoors, and only indoor system ID information when the terminal is indoors.

See AT&T Case, Dkt. No. 62-10, Kelley Decl. at ¶¶ 209-210.

87. I have seen no evidence in the specification suggesting that “locational area” and “indoor system ID information” must always be mutually exclusive. The specification’s discussion of “location information” shows that it can be locational area, indoor system ID information, or both.

88. During the authentication process and before a switching action occurs, different types of location information could be stored in different registers and it is possible to have the locational area information as well as the system indoor ID information in the same register.

89. Mr. Rysavy opines that “[w]hile the “location information” can be both locational area and indoor system ID information, the ’728 patent requires specific location information in specific situations.” Rysavy Decl. at ¶ 33. Mr. Rysavy further opines that location information can only be locational area when the data communication terminal is located outdoors and can only be indoor system ID information when the terminal is located indoors. *Id.* at ¶¶ 34-37.

90. In my opinion, Mr. Rysavy is inappropriately limiting the scope of the asserted claims. As explained above, the specification contemplates that, in certain situations, indoor system ID information and locational area are both stored. *See, e.g.,* ’728 Patent at 4:23-24.

91. Mr. Rysavy opines that T-Mobile’s limiting construction is “necessary for the

invention of the '728 patent to operate as intended.” Rysavy Decl. at ¶ 36. I disagree. I have seen no evidence in the specification suggesting that “locational area” and “indoor system ID information” must always be mutually exclusive. The specification’s discussion of “location information” shows that it can be locational area, indoor system ID information, or both. During the authentication process and before a switching action occurs, different types of location information could be stored in different registers and it is possible to have the locational area information as well as the system indoor ID information in the same register. Having different types of location information stored in different registers might allow for a faster authentication process which would provide a faster switching mechanism. For example, if a previous locational area or indoor system ID information had been authenticated, having the locational area information as well as the system. Contrary to Mr. Rysavy’s statement, in this embodiment the invention of the '728 Patent will still function normally.

92. Accordingly, it is my opinion that a POSITA would have understood “location information” to mean “information on a locational area or indoor system ID information or both,” but that the remainder of these terms, “...of the data communication terminal received through the indoor network” and “...of the data communication terminal received through . . . the outdoor wireless internet network,” should be given its plain and ordinary meaning to a POSITA.

//

//

//

//

//

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 21st day of April, 2021 at San Jose, California.

Thomas L Blackburn

Thomas Blackburn